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the gull

CALIFORNIA
ACADEMY OF SCIENCES
FEB 27 1980
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Volume 62

Berkeley, Calif.

March 1980

Number 3

Rekindling a Light

Our March general membership meeting will feature architect Thomas Butt who will give a slide-illustrated talk about the restoration planned for the East Brother Light Station. This historic lighthouse, established in 1873 and the oldest of 14 that once served San Francisco Bay, is situated in the straits between San Pablo and San Francisco bays off the city of Richmond.

East Brother Light Station, Inc., a non-profit corporation, has embarked on the restoration project which will be in full operation during the summer and fall of 1980. When restoration is complete, the one-acre island with its buildings will be available to the general public for scientific research, education, seminars, conferences, retreats and general recreation. A bed and breakfast inn in the main quarters will generate income for maintenance and operation. Mr. Butt's slides will also touch on other natural and historic sites nearby, including the Castro Point Railroad, Winchaven and the old whaling station.

The meeting will be held on Thursday, March 13, at the San Francisco Travelodge at the Wharf, near Pier 39, starting at 7:30 p.m. in the Golden Gate Room. Free parking is available in the upper Travelodge parking lot. Take the elevator down to the first level; the meeting room is near the swimming pool and courtyard.

—PROGRAM COMMITTEE

Published each month except August by the Golden Gate Audubon Society, office address 2718 Telegraph Avenue, Berkeley, CA 94705. Second class postage paid in Berkeley, CA. (THE GULL - USPS 417-705)

Field Trips Calendar

See the February *Gull* for details on the following trips:

Saturday, March 1—San Francisco Bird Blitz.

Saturday/Sunday, March 15-16—Honey Lake.

Saturday, March 8—Jewel Lake, Tilden Regional Park. From north Berkeley, drive up Spruce St. Where Spruce intersects Grizzly Peak Blvd., cross Grizzly and immediately turn left down Cañon Dr. and follow signs to the Tilden Nature Area. Meet at **7:45 a.m.** at the gate to the Nature Center. We will bird the Jewel Lake area in the morning. We should see common birds of the East Bay hills and perhaps a few early migrants. Leader: Leo Hallford (522-1864).

Sunday, March 9—Tennessee Valley, Marin County. Meet at **9 a.m.** Going north across the Golden Gate Bridge, take the Mill Valley exit under the Richardson Bay Bridge and after a quarter mile turn left at the Tennessee Valley sign. Drive one mile to the end of the road. We will walk about two and one-half level miles to see land birds, shore birds and, hopefully, White-throated Swifts. Bring lunch. Leader: Betty Short (921-3020) work phone. (✓)

Wednesday, March 12—Mini trip to the Lafayette Reservoir. Meet at the Claremont Hotel parking lot at the Ashby entrance to carpool at **8:30 a.m.** Lunch is optional. The trip is cancelled if it rains. Leaders: Ruth Voss (525-8032) and Delpha de Timofeev.

Sunday, March 16—Alameda and San Leandro Shoreline. Meet at **9 a.m.** in Alameda, at Broadway and Shoreline Dr. We will bird the Elsie B. Roemer Bird Sanctuary and the San Leandro Bay Regional Shoreline. Toward the end of the day we will look for Burrowing Owls on Bay Farm Island. Be sure to bring lunch and liquids. We should see migrating shorebirds, many in breeding plumage. Waterfowl should also be present in good numbers, so bring your scope. Leader: Leora Feeny (522-8525). (✓)

Sunday, March 23—Briones Regional Park. Meet at **8:30 a.m.** at the Bear Creek Rd. entrance parking lot. We will concentrate on each person learning one new bird or bird sound during the morning. We will hike for about five miles during the afternoon, so bring your lunch. From Hwy. 24, take the Orinda exit and turn north onto Camino Pablo. Go north for about two miles to Bear Creek Rd. (Briones Park sign), turn right and drive four miles east to the park entrance. Leader: Marie Mans (284-7681). (✓)

Saturday, March 29—Sunol Regional Park. Meet at **8 a.m.** at the park entrance. Take I-680 south, turn off at Calaveras Rd., go left and follow the signs to Sunol Park, about five miles. Bring lunch and liquids. We should see Golden Eagles, a variety of winter residents and early spring migrants. Leader: Peter Allen (981-7199). (✓)

Sunday, March 30—Redwood Regional Park, Oakland This trip should be especially good for beginning birders. Meet at **7:30 a.m.** at the intersection of Redwood Rd. and Skyline Blvd. by the gas station. We will caravan from there to the Skyline entrance at the northwest end of the park. We will hike about five miles. Wear hiking boots or sturdy shoes. We should see a wide variety of wintering birds as well as permanent residents and a few spring migrants. Bring your lunch for a picnic afterward. Leaders: Shirley and Michael Kelly (387-8290). (✓)

Sunday, April 6—Golden Gate Park, San Francisco. We will meet at **9:30 a.m.** for the traditional Easter walk around the Chain of Lakes as well as the other lakes in the vicinity. There is a variety of waterfowl including Wood Ducks at this time of year. We also should see at least two varieties of hummingbirds. It has been suggested that we go to the Cliff House for brunch after the walk. We will meet at 43rd Ave. and Fulton Street near North Lake (Chain of Lakes). Leader: Betty Short (921-3020) work phone.

Carpooling: Carpooling arrangements can be made for trips marked (✓). If you need a ride or are offering one, call Kate Partridge at work (642-2881, 8 a.m. - 1 p.m.) or at home before 9 p.m. (548-0779). All expenses, including gas and incidental fees, are shared by riders. It is best for all involved to plan these arrangements with the driver at the outset of the trip.

—FIELD TRIPS COMMITTEE

January Observations — Through January 30

FARALLONES, November 22 to December 21

Weather delays are bringing the Point Reyes Bird Observatory Farallon bird reports a month late. Here are the "latest" highlights. Two Cattle Egrets are wintering, probably eating kelp flies, sometimes near Elephant Seals. Small (Cackling or Aleutian) Canada Geese on Dec. 4 and 16 doubled the number of Farallon sightings. Two Rock Sandpipers are wintering. A Loggerhead Shrike that arrived Sept. 11 seems to be wintering; the five previous Island records were all spring or fall. Add to our Palm Warblers one Nov. 23-24 and a bird presumed to be different, Nov. 28. Another Grasshopper Sparrow visited on Nov. 29 and the Black-throated Sparrow remained through Nov. 22.

BIRDS CONTINUING INTO JANUARY

These selected records are abbreviated for economy. Cattle Egret: six to nine near Half Moon Bay to mid-January (BW). Eurasian Wigeon: Drakes Estero Jan. 20 (AG, *et al.*), Fleishhacker Zoo into January (mob). Tufted Duck: Muddy Hollow to Jan. 6 (JZ, DJ). Har-

lequin Duck: Moss Landing to Jan. 6 (DSc). American Golden Plover: up to nine near Spaletta Ranch to Jan. 24 (AG, WG). Rock Sandpiper: Pebble Beach to Jan. 1 (JM, *et al.*). Williamson's Sapsucker: Tunnel Rd., Oakland, to Jan. 5 (DJ). Tennessee Warbler: Pt. Reyes Station to Dec. 27 (AG, WG). Nashville Warbler: present in several sites into early January (mob). Yellow Warbler and female **Great-tailed Grackle** are both still at Walton Square in San Francisco (DE).

MARINE SPECIES

A Monterey pelagic trip Jan. 26 encountered a Laysan Albatross and a Pink-footed Shearwater (DR, PSG). Again we are astounded by a **frigatebird**; an **adult female** sailing north past Sea Ranch, Sonoma County, Dec. 31 was assumed to be a Magnificent Frigatebird (LR, MR, *et al.*), but the observation did not rule out Great Frigatebird, a male of which was seen in Monterey Bay Oct. 13. There is one previous winter frigatebird for our area. This month's female immediately followed a strong southerly storm. Two female Harlequin Ducks were reported from Land's End Jan. 6 (NB). Oldsquaws totaled six: Coyote Point Dec. 28 (GF), Richardson Bay Dec. 29 (BS), Emeryville Marina Dec. 31 (GH) with two there Jan. 1 (AG, WG), two in Monterey harbor Jan. 13 (BH, GGAS).

Red Phalaropes from the fall wreck declined rapidly and most of these stragglers seemed in poor condition. Sixteen remained to Dec. 29 on Fremont area salt ponds (SFB, *et al.*), where the last single was seen Jan. 23 (CS). Other late landward sightings were one at Golden Gate Fields Jan. 1 (DJ, CJ), three at the Berkeley Pier Jan. 1 (GH), one at Alameda South Shore Jan. 13 (DRi) and one on the Palo Alto Duck Pond Jan. 18 (JM, *et al.*). Eclipsing all for strangeness of location was the Red Phalarope on Paicines Reservoir, San Benito County, Jan. 19 (DJ, JZ)! Arguably even less expected was the adult Pomarine Jaeger on the shore of San Pablo Bay at Lower Tubbs Island Jan. 20, seen during an aerial census of birds (CS, GT). The expected midwinter Glaucous Gulls appeared, with the first two choosing Richardson Bay Dec. 29 (BS), no doubt because of the herring run. Sightings followed at Berkeley Pier Jan. 5 (AG, WG, *et al.*), Davis Street dump Jan. 25 (SFB) and two in Monterey Bay Jan. 26 (DR, PSG).

Marbled Murrelets recurred at Berkeley Pier, with two Jan. 6 (SFB, KLB, VD) and one Jan. 12 (JZ, *et al.*). Two Ancient Murrelets also tarried at Berkeley through Jan. 12 (mob, VD). The real surprise was the report of over 50 Ancients along tide lines inside the Bay between Alcatraz and Angel Island Jan. 19 (GHa). Ancients also associated with tide lines outside the Bay that day (SFB). A Tufted Puffin was found in Monterey Bay Jan. 26 (DR, PSG).

OTHER NONPASSERINES

Good numbers of Cattle Egrets greeted the new decade. New reports were: twelve in the Los Baños area Dec. 28 (NS, *et al.*), one at Lincoln Park, San Francisco, Jan. 1 (DM), 32 at the Davis Hawk and Owl Refuge in early January (*fide* EG), 32 (the same flock?) east of Oakley, Contra Costa County, Jan. 13 (AE) and one at Fleishhacker Zoo Jan. 22-30 (MW). A Ross' Goose wandered to Rodeo Lagoon Jan. 27 (PT). Three more Eurasian Wigeons were reported: Mendoza Pond Dec. 27 (AG, WG), Richardson Bay Dec. 29-Jan. 7 (BS, TB) and Bolinas Lagoon Jan. 26 (SFB, *et al.*). A male Tufted Duck visited Coyote Hills Jan. 19 (JP, AK). Despite our many recent records this species is still quite rare. Given its habitat preferences in the Bay Area it is likely that the Tufted Ducks we discover represent a large proportion of those actually present. Grizzly Island featured an adult Bald Eagle on Jan. 27 (RL) and other adults were south of Gustine Jan. 30 (HG, *et al.*) and at Paicines Reservoir Jan. 31 (NC, HG, *et al.*). On the latter day an immature was in Panoche Valley (HG, NC, *et al.*). Again Black Rails wintered at Corte Madera and Palo Alto (mob). Two American Golden Plovers were found at Dillon Beach Jan. 26 (MLR, *et al.*).

It is distressing to note that a flock of ten or twelve Canary-winged Parakeets is still cruising the northern San Francisco waterfront neighborhoods (NB). Conversely, we continue to welcome the hordes of eared owls. The Long-eared Owls roosting in a pine grove on the Pt. Reyes Peninsula are impossible to count, but estimates are in the **dozens** (mob). Up to **55** Short-eared Owls inhabited the area of Springtown, near Livermore (KemH, AE). More solitary from conspecifics was the female Costa's Hummingbird at El Carmelo Cemetery, Pacific Grove, Dec. 27 (*fide* RS). The Black Diamond Mines parking lot, Contra Costa County, was the Jan. 1 home of a male Red-naped ("Yellow-bellied") Sapsucker (PW).

PASSERINES

A Rough-winged Swallow was closely observed and well described on the Los Baños Waterfowl Area Dec. 28 (KH *et al.*). Our few winter records have generally been more coastal. Large numbers of American Robins and Cedar Waxwings arrived in the East Bay Jan. 13, presumably due to the major snow storms in the northwestern states (DJ, *et al.*). A Townsend's Solitaire report issued from Mt. Diablo Dec. 29 (*fide* DE). The Northern Shrike in Hicks Valley, Marin County, Jan. 19 was a subadult (RS).

A Palm Warbler was near El Carmelo Cemetery, Pacific Grove, Dec. 27 (*fide* RS). January's only Palm inhabited the Limantour parking

lot on the 20th (AH, mob). Christmas Counts produced two American Redstarts: at the mouth of the Carmel River Dec. 27 (*fide* RS) and near the town of Bodega Dec. 30 (KY, DMcC). The "Baltimore" Northern Oriole was still in Greenwood Park, Pacific Grove, Dec. 27, when it was accompanied by a "Bullock's" type (*fide* RS). Another "Bullock's" report came from San Leandro Jan. 13 (MA). A Western Tanager was just visiting the California Academy of Sciences Jan. 29 (LCB).

The only Evening Grosbeak reports were four along Palomares Road, Alameda County, Dec. 29 (TP, *et al.*), three in Lafayette Jan. 29 (LB) and 10-20 at College of Marin throughout the period (TO, JM, *et al.*). A Green-tailed Towhee was in Pacific Grove Dec. 27 (*fide* RS). A few miles south of last winter's sightings, a Lark Bunting appeared briefly near Shotgun Pass, San Benito County, Jan. 26 (SL). The Doran Park pond hosted two Swamp Sparrows in late December, one of which was still present Jan. 2 (DS). Three Lapland Longspurs at fields north of Hayward Landing Jan. 3 (HC) were probably transients.

Observers: Milton Abbott, Karen L. Bailey, Stephen F. Bailey, Laura Bain, Laurence C. Binford, Neil Blank, Tony Briggs, Ted Chandik, Howard Cogswell, Nancy Conzett, Vickie Dziadosz, Art Edwards, Dick Erickson, Gary Fellers, Al Ghiorso, Wilma Ghiorso, Ed Greaves, Helen Green, Pacific Seabird Group, Kem Hainebach (KemH), Gary Hallway (GHa), Keith Hanson (KH), Roger Harris, Bob Hirt, Alan Hopkins, George Hugenberg (GH), Claire Johnson, Dick Johnson, Alice Kase, Ray Lewis, John Luther, Susanne Luther, many observers (mob), Dianne McClung, Grace McMichael, Mort McMichael, Joe Morlan, Dan Murphy, Point Reyes Bird Observatory (Farallon report thanks to Bob Boekelheide), Tod Olson, Treet Pelletier, Jean Puffer, David Rice (DRi), Don Roberson (DR), Mary Louise Rosegay, Leonard Roth, Marjorie Roth, Barry Sauppe, Don Schmoldt (DSc), Dave Shuford (DS), Golden Gate Audubon Society, Rich Stallcup, Nick Story, Chris Swarth, Philip Teitelbaum, Gil Thompson, Betty Wayette, Peter White, Mike Wihler, Keiko Yamane, Jon Zablackis.

—STEPHEN F. BAILEY, *Observations Editor*

Museum of Vertebrate Zoology

University of California, Berkeley, CA 94720

(phone 548-9507; or Karen L. Bailey at 642-3327 8 a.m.-noon, 1-5 p.m.).

Conservation Notes

ALASKA BILL IN SENATE SOON (AGAIN). The Alaska lands legislation will soon come up for debate in the Senate and support for the Tsongas substitute is needed. Senator Paul Tsongas of Massachusetts is sponsoring Amendment 626 which allows commodity development

on a vast majority of potential areas but protects the spectacular wildlands and wildlife. It is similar to H.R. 39, now passed by the House, and far superior to the Energy Committee's version which actually *mandates* oil and gas exploration in the Arctic Wildlife Range and fails to provide wilderness protection for millions of acres of outstanding natural environments.

Several other conservation bills remain in various stages of Congressional completion and among those likely to be approved soon are enlargement of Point Reyes National Seashore and establishment of the Channel Islands National Park.

BLM COMPLETES FIRST PHASE OF CALIFORNIA DESERT WILDERNESS INVENTORY. The Bureau of Land Management has completed the first phase — the “inventory” — in the process of identifying possible desert wilderness areas in California. The 93 “wilderness study areas” identified total 1,141,445 acres of public lands and represents slightly over one-third of all land under BLM control in California. The Bureau's wilderness review process has three phases: inventory, study and submission of a report to Congress. Public involvement is provided for in all phases of the process. Many members of GGAS participated in this first phase by submitting comments on specific desert areas for BLM consideration and the results, in the form of the Wilderness Inventory Report, can now be reviewed in the GGAS office.

BAN ON LEAD SHOT NEAR? Extensive field tests conducted recently at Tule Lake Wildlife Refuge have shown steel shot performs the same as lead shot at all ranges and is at least equally effective for hunting waterfowl. Because ingestion of lead shot pellets by feeding waterfowl causes significant poisoning losses, most wildlife groups support the use of nontoxic shot. Some hunter organizations have opposed making the switch, however, saying steel shot is less effective. (Editorial comment: Who would blame the waterfowl if their lobby claimed that *both* types of shot were toxic when directed with some degree of accuracy?)

NATIONAL WILDLIFE WEEK THIS MONTH. The theme for National Wildlife Week 1980 is habitat protection, the same theme featured in the first celebration proclaimed by President Franklin Roosevelt in 1938. This year's “Save a Place for Wildlife” campaign will run March 16-22 — the first week of spring. It is a time set aside to call special attention to the needs of wildlife and, especially this year, the continued destruction of wildlife habitat. The National Wildlife Federation, which is sponsoring the week, offers a free color copy of a beautiful poster of two red fox pups. Send a postcard to NWF, Dept. NWP80, 1412-16th St., N.W., Washington, D.C. 20036.

The Fabric of Nature

For a moment the waters swirled uncertainly. They had been rising for the last half-day and now lapped quietly at the tidal fulcrum, pausing at the high-tide mark. Then the water receded and the tide began to ebb.

The surface of the estuary dropped rapidly, rushing to fall nearly seven feet in the next six hours. Two hours after the high tide, a band of mud quickly began to widen around the margins of the lagoon as the waters abandoned the thick pickleweed marsh. Roosting godwits stirred, lifted their bills from their backs and stalked into the shallows to probe for prey. Soon they were joined by a crowd of dowitchers, pumping rapidly up and down, while a few Willets teetered deliberately nearby. A yellowlegs glided toward the flock, whistling three times as it landed in a silty puddle.

On the exposed mudflats, a large flock of sandpipers roved rapidly along the water's edge. Most were Dunlin and their cold brownish-gray plumage reflected the sullen skies overhead. The high tide had forced them into the marsh for several hours but now they fed voraciously on the myriad of invertebrates which lived in the rich, nutritious mud of the estuary.

On a bluff overlooking the shorebirds, pangs of hunger struck at the young raptor. His last meal had been a starving pipit two days previously and he needed to feed soon or face the prospect of starvation himself. Scanning the flats for prey, the Merlin focused upon the flock of twittering shorebirds, dropped from his perch and attacked. He gained speed rapidly as he soared downward across the steep face of the bluff and then, one hundred meters from the birds, he leveled off and flapped powerfully across the marsh just inches above the vegetation. Fifty meters away, he set his wings and glided silently over the mud toward the Dunlin.

A Willet saw him first and screamed, springing into flight. Suddenly the entire mudflat was awhirl in a rush of frightened wings. The flock of Dunlin arose and wheeled away as one, but the streaking blur of grey was already among them. Flashing yellow talons snapped out and struck . . .

Predation is a constant threat to wintering birds in central California. Ambushing accipiters terrorize the coastal woodlands and three species of falcon regularly patrol our ocean beaches, marshes and headlands. One tactic which many birds have adopted, apparently in response to this predation pressure, is flocking. Theoretically, the chance that any individual bird will be eaten decreases if it is in a flock because all its flockmates are also potential raptor prey. This simple prediction implies

The Emeryville Crescent

GOLDEN GATE AUDUBON SOCIETY, POSITION PAPER #2, FEB. 1980

In 1978 this Society distributed information about our opposition to the bicycle trail which the East Bay Regional Parks District proposed constructing along the Emeryville Crescent. Because of the passage of Proposition 13 this project has been dropped indefinitely.

The Golden Gate Audubon Society Board of Directors and members continue to be concerned about the fate of the Crescent. The preservation of this valuable wildlife area is one of our main concerns.

The Crescent has a variety of habitat: mudflats, sandbars, sandy beach, fresh water cattail marsh, brackish pond and the salt marsh with its cord grass and pickleweed. The latter is one of the world's richest environments. More than 10,000 individual migratory and resident shorebirds and waterbirds of 60 species use the Crescent for feeding, roosting and bathing. This shoreline's spectrum of birds is unique. Three endangered birds use the Crescent. There is an isolated breeding colony of California Clapper Rails, the California Brown Pelican uses the area during the summer and fall, and the California Least Tern feeds, rests and bathes there during its summer breeding season. These endangered species are very sensitive to dis-

from its wintering area, is regularly found on land.

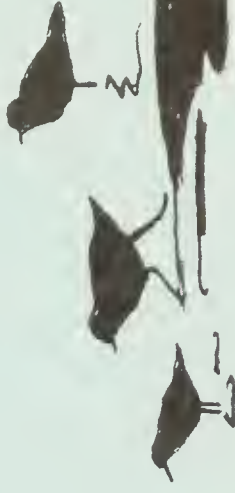
The Emeryville Crescent is one of ten areas in California being considered by the U.S. Fish and Wildlife Service for its Unique Wildlife Ecosystem Program. However, due to budget cuts this program is at present in limbo.

There is some feeling that benign neglect is the best way to protect the Crescent for now. If this is to be effective the sculptors and others who use the area must become aware of the value of this land and its wild inhabitants. Encroachment on the marsh results in trampling plants, impacting the soil, and disturbing land-roosting birds which cannot retreat to deep water. Unleashed dogs can be highly disruptive. The Golden Gate Audubon Society has discontinued field trips to the Crescent because of the extreme fragility of the area. We urge others to join us in respecting this sensitive ecosystem, the last of its kind in this part of San Francisco Bay.

For more information contact:

THE GOLDEN GATE AUDUBON SOCIETY, 2718 TELEGRAPH AVE., BERKELEY, CA 94705

Phone: 843-2222





that any bird's predation risk would decrease as its flock size increases; i.e., a bird in a very large flock should be "safer" than a bird in a very small flock because the risk is spread among more flock members. This assumes that all birds in a flock experience the same risk. However, not all members of a prey population are equally vulnerable to predation. It turns out that some raptors may be more successful when they attack very large flocks and thus flock size affects an individual bird's risk.¹ A bird's position in a flock may also be critical to its survival.

Nonetheless, the generalization that a flocking bird is safer than a single bird probably holds true under most conditions. This was dramatically underscored recently on Salmon Creek Beach in Sonoma County. A territorial Sanderling was feeding alone along a short stretch of beach, having successfully driven off all its neighboring Sanderlings fifteen minutes earlier. Suddenly, a Merlin dashed over the dunes, vigorously pursued the solitary bird and nearly captured it. After escaping, the Sanderling abandoned its territory and immediately flew several hundred meters up the beach and joined the first flock it came to. This individual learned the hard way that sometimes it's safer to be sociable.

When a flock of shorebirds spot an approaching raptor, they typically "spook" or flush from their position on the ground into a tight aerial flock to escape. Although they spook most dramatically when a predominantly avian predator appears (e.g.—Merlin or Peregrine), raptors which rarely take birds can spook them as well. In fact, a nervous flock recovering from the scare of a recent falcon attack can be spooked by a bird as harmless as a vulture. However, if you were a shorebird, I'm sure you'd agree that it is wiser ("more adaptive") to err on the side of safety than to wait a split second too long and end up as a victim of predation.

. . . The Dunlin was stunned by the blow, and its rasping shriek was choked off as the Merlin's claws clutched at its throat and body. One wing was pinned by the falcon's grasp, but the other beat wildly for a few moments, slicing the air in futility. The talons closed more tightly around the Dunlin, squeezing the struggling bird until it struggled no more. The free wing dropped limply.

The Merlin returned to the bluff and perched on a narrow sandy ledge. Below him, a large flock of sandpipers had just returned to the mudflat where they huddled closely together, warily scanning the skies. The Merlin began plucking at the bloodied feathers of the Dunlin's breast. He would live to hunt again.

—BRIAN J. McCAFFERY

¹Page, G. and D. F. Whitacre. 1975. Raptor predation on wintering shorebirds. *The Condor* 77: 73-83.

Audubon Adventures for March

Two more natural history seminars have been scheduled for March in GGAS' Audubon Adventure Series. They are:

INTRODUCTION TO BAY AREA WILDFLOWERS, March 8 and April 26 from 9 a.m. to 3 p.m. This course, given by John Couch and Denise Alexander, will acquaint the beginner with Bay Area wildflowers. Included in each class will be a lecture/slide presentation, followed by a walk emphasizing a first approach to knowledge of flower parts and identification of native plants.

The lecture and slides will be given at the East Bay Regional Park Botanical Garden's visitors' center in Tilden Park, Berkeley. The walk in the nearby hills will extend over the lunch hour, so it is suggested that you pack something to eat along the way.

THE WOLF and OTHER PREDATORS, March 23 from 10 a.m. to approximately 4 p.m., with a break for lunch. Tony Bila, assistant head keeper of the San Francisco Zoo, will give a class on the natural history, behavior and current status of the wolf. The course will feature films, a discussion of the importance of predators and predation to their ecosystems and to the systems they prey on as well as the chance to meet Amarak, Kiowa and Niska, the inhabitants of the new Wolf Woods exhibit at the zoo which Mr. Bila helped design. There will also be a tour of the zoo and relevant exhibits.

Cost of these courses will be \$9 per person for GGAS members plus any additional fees such as facility costs or extra instructor time. If you are not a member of GGAS the cost will be an additional **one-time** fee of \$20 per person or \$25 per family. This additional fee provides a year's membership in GGAS and National Audubon Society which includes subscriptions to *The Gull* and NAS's *Audubon* magazine.

To enroll in either of these courses, please send your check and a self-addressed stamped envelope to Golden Gate Audubon Society, 2718 Telegraph Ave., #206, Berkeley, CA 94705. Include course title, its date and the number of people planning to attend.

You will be sent complete information on the course with a confirmation of your enrollment. For any further information call the GGAS office at 843-2222.

Bird Sounds Class with Marie Mans

Marie Mans will repeat her class on BIRD SOUNDS through the Albany Adult School with emphasis on the songs of local birds in spring, demonstrated by tape recordings and slides. You will learn how to identify, hear details of structure and discover functions of these fascinating sounds. Local field trips may be arranged to reinforce what you hear in class and to demonstrate field recording equipment. The class is suitable for beginning and intermediate bird students or anyone interested in the sounds of nature. Classes start April 9 at 7 p.m.; the cost is \$10 for five sessions. For more information call the school at 526-6811.

Costa Rica, April 12 - May 3, 1980

There is still space for you on our GGAS-sponsored Costa Rica tour, but act now. Don't miss your opportunity to enjoy outstanding birding in a great diversity of natural habitats. Costa Rica's stability and hospitality, unmatched in the New World tropics, add immeasurably to the pleasure of the experience. The basic two-week tour covers most of the country's habitats from wet forest to dry and from coast to mountaintops. The optional third week crosses Cerro de la Muerte and explores the Panama border country. We should find more species on this tour than most birders have on their life lists.

Call Dr. Stephen F. Bailey (548-9507) for information.

Farallon Island Trips

GGAS will sponsor boat trips leaving from the Emeryville marina to circle the Farallon Islands on Sunday, May 4 and May 11. These islands have the largest population of breeding marine birds in the United States outside of Alaska and Hawaii. Past trips have produced sightings of Tufted Puffin, shearwaters, albatross, jaeger, Sabine's Gull, alcids and other birds not commonly seen from shore. The islands also provide resting or breeding areas for five species of pinniped.

Reservations may be made by sending \$19 per person with a self-addressed stamped envelope to GGAS, 2718 Telegraph Ave., #206, Berkeley, CA 94705. Checks should be made payable to the Golden Gate Audubon Society. Space for the trip is limited and will be filled on a first come, first served basis.

The Boston-to-Wales Express

June 16, 1952, 1:30 a.m. Time to check on AX6587. Every six hours, day and night since June 12, Dr. Matthews had to drop whatever he was doing and go check up on AX6587. What is an AX6587, anyway? No, it's not the name of a newly discovered viral strain; only the leg band number on a Manx Shearwater. As part of an ongoing experiment on navigation in Manx Shearwaters being conducted by Dr. G. V. T. Matthews and Dr. R. M. Lockley, this individual had been removed from its burrow on tiny Skokholm Island off the coast of Wales, banded and taken by air to Boston, 3200 miles away, where it was to have been released.

Matthews and Lockley were trying to answer, in part, the age-old question: How do birds find their way back to nesting sites after migrating thousands of miles? But they were really asking an even bigger question: Could a bird find its way back after being transported thousands of miles to a place far removed from its normal wintering grounds, in a direction *other than that* to which it was accustomed to traveling?

It had been only 12½ days since the bird was removed, but already Dr. Matthews was wondering if it would ever return. Could it successfully find its way back to this tiny one kilometer-square island over a 3000-mile expanse of ocean, in a direction nearly perpendicular to its normal migratory pathway? There was still no word from Rosario Mazzeo, who was supposed to have released the bird on April 3 at the Boston Airport.

Dr. Matthews casually reached into the burrow of AX6587 for what seemed like the hundredth time. Empty. No, wait! There was a *bird* in there! He quickly, but gently, pulled the bird from its burrow and read the band number. Then he read it again to be sure. A-X-6-5-8-7! He let out a loud whoop. The others, awakened by this strange, non-avian call, were soon on the scene, dazed and foggy-eyed from their abruptly-interrupted sleep. Dr. Matthews placed AX6587 back in its burrow, then plugged the entrance so he could be sure the bird would still be there in the morning. He feared that Rosario had run into trouble with customs at the London Airport and had released the bird before leaving England. But confirmation of the bird's release in Boston came next morning, when Rosario's letter arrived. "A pretty touch, the bird beating the mail!" exclaimed Dr. Matthews, still elated over the bird's successful journey.

Now he knew it could be done. But the real question loomed larger

than ever. How did it happen? Was it a matter of chance? Could it be repeated? Other experiments were to follow. Two Leach's Storm-Petrels, removed from their nests in Maine and released in Sussex over 3000 miles away, returned within two weeks. Laysan Albatrosses, taken from Midway Island where they nest and transported to release sites on the fringes of the Pacific, returned safely to their nests. One made it back from Washington, a distance of 3200 miles, in ten days. Another traveled 4000 miles from the Philippines.

Obviously there was more than luck and dead reckoning involved. What navigational systems were they using? Several orientation studies had already shown that birds could navigate using the stars in the northern sky as navigational cues. Gustav Kramer and others had eloquently demonstrated in a series of experiments conducted in the early 1950s that European Starlings could navigate using the position of the sun in the sky. This, of course, meant continual compensation for the ever-changing position of the sun as the day progressed. Yet these birds were following their normal migratory route, blindly obeying some innate mechanism that dictated the proper direction to fly.

But what mechanism, if any, could tell a bird how to get home if it didn't even know in which direction to fly? As early as 1947, Dr. H. L. Yeagley had suggested that birds could detect the alignment of the earth's magnetic field. This was an interesting concept, because geomagnetic cues could give a bird a bicoordinate navigational system, the necessary requisite for true navigation. The bird could obtain rough latitudinal information from the angle of inclination of the earth's magnetic field and longitudinal information from the position of the sun in the sky relative to where the sun would be at the same time of day at home. If this seems confusing, think of yourself having just flown from New York to Los Angeles. Your body says it's noon but the sun is low in the eastern sky. The fancy name for this phenomenon we know as jet lag is "circadian rhythm," a kind of built-in biological clock.

Alas, Yeagley's experiments could not be repeated, not even by himself. The idea was forgotten. It wasn't until many years later that several rather sophisticated experiments on geomagnetic direction-finding, conducted by William Keeton, Stephen Emlen and others at Cornell University, bore Dr. Yeagley out.

It must seem that a bird would have to use a rather sophisticated computer to plot its course home using various combinations of all these navigational cues. But remember, human intelligence is measured in terms of reasoning power. Birds might not be able to solve problems

through reasoning, but they're still exceedingly complex organisms. Much of their brain is given over to innate powers — instincts, if you wish. These built-in guidance systems have been strongly selected-for over millions of years of evolution. We certainly have only begun to solve the many mysteries of bird migration, but at least we now have a crude explanation as to how a bird *might* find its way home.

—LEE JONES

Reprinted from the LAAS *Western Tanager*, June 1979, Vol. 45, No. 9

GIFTS AND BEQUESTS

For GGAS

In memory of	Gift of
Vi Homem	George Homem
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Education Committee Fund	Kay Steinberg

Memorial and honorary gifts and bequests will be used as specified by the donors. Acknowledgment will be made in *The Gull* and personally by the Corresponding Secretary, Minnie Groshong. Please send checks made out to the Golden Gate Audubon Society to: Corresponding Secretary, GGAS, 2718 Telegraph Avenue, Berkeley, California 94705. All gifts are tax deductible.

GGAS Offers Scholarships to Ecology Camp

GGAS will offer two scholarships to the 1980 Audubon Ecology Camp in the West to be held this summer at Trail Lake Ranch near Dubois, Wyoming. The purpose of the camp is to increase campers' knowledge and understanding of the natural world, thereby developing an appreciation and affection for nature and its processes as well as a sense of individual responsibility for the care and wise use of our natural resources.

Recipients of the GGAS scholarships will be expected to use the information and knowledge they gain during the two-week course to help GGAS in its conservation efforts.

If you are interested in applying for a scholarship, contact the GGAS office soon.

The following positions are up for election to the GGAS Board of Directors.

Note: This ballot is for members of the Golden Gate Audubon Society only. Unless you are a member, do not return this ballot.

For your vote to be counted, this ballot must be returned not later than **April 30**. Please remove this page from *The Gull* (with your name and address on the back) and mail or bring it to the Golden Gate Audubon Society, 2718 Telegraph Ave., #206, Berkeley, CA 94705.

Check one:

- ☐ This ballot represents one vote for each candidate marked.
- ☐ This ballot represents two votes (family membership).

Vote for four:

- ☐ Bruce Howard, First Vice President
- ☐ Deborah Thurmon, Second Vice President
- ☐ Kay Steinberg, West Bay Director
- ☐ Gary Quien, East Bay Director

Cooper Society Meeting for March

Featured speaker for the March 10 Cooper Society meeting will be Judy Gradwohl of the UC Museum of Vertebrate Zoology. Her topic is the feeding, fighting and flocking of the Panamanian antwrens. The meeting starts at 8 p.m. in room 2503 of the Life Sciences Building on the UC campus.

Extended Field Trips

The Extended Field Trips Committee is now accepting proposals from GGAS members and non-members for extended tours they would like to lead in 1981. Please submit a brief outline of your proposed trip to the committee, c/o the GGAS office, by May 1, 1980. Proposals will be screened by the committee and final approval will be made by the GGAS Board of Directors.

Change in GGAS Office Hours

Jerry Emory, Executive Director of GGAS, announces a change in office hours. Instead of the previous 10 a.m. - 5 p.m. schedule, the office is now open from 9 a.m. - 4 p.m.



Golden Gate Audubon Society, Inc.
Office: 843-2222
2718 Telegraph Avenue, #206
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THE GULL

March 1980

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Mail for all individuals listed above should be sent to the GGAS office.

Send address changes to office promptly; Post Office does not forward *THE GULL*. Monthly meetings: second Thursday, 7:30 p.m. Joint membership — local and national \$20 per year (individual); \$25 (family); includes *AUDUBON* Magazine and *THE GULL*; to join, make checks payable to National Audubon Society and send to GGAS office to avoid delay in receiving *THE GULL*. Membership renewals should be sent directly to the National Audubon office. Subscriptions to *THE GULL* separately \$5 per year; single issues 50¢. High school and college student membership \$13.50 per year. Senior citizen individual, \$13.50, senior citizen family, \$15.50.

The Golden Gate Audubon Society, Inc. was established January 25, 1917, and became a chapter of National Audubon in 1948.

The Gull deadline is the first of the month for the following month.